

Claims

- [c1] 1. A magazine-based data cartridge library comprising:
- a frame;
 - a shelf system, operatively attached to said frame, for supporting at least two data cartridge magazines and comprising at least one shelf;
 - a drive that is operatively attached to said frame;
 - a cartridge transport device, operatively attached to said frame, for moving a data cartridge between a data cartridge magazine and said drive;
 - a magazine transport device, operatively attached to said frame, for moving a data cartridge magazine within a space defined by said frame;
 - a transport space that defines a volume within said space defined by said frame within which said data cartridge magazine transport operates;
 - wherein said transport space is bounded by a first transport space vertical plane and a second transport space vertical plane that is substantially parallel to said first transport space vertical plane;
 - wherein said transport space has a transport space depth that is the distance between said first and second transport space vertical planes as measured along a line that is perpendicular to said first and second transport space vertical planes; and

a magazine space that defines a volume within said space defined by said frame within which a data cartridge magazine resides when operationally oriented with respect to said shelf system such that said magazine transport device is able to displace the data cartridge magazine relative to said shelf system and operationally located so as to not otherwise interfere with movement of said magazine transport device; wherein said magazine space is bounded by a first magazine space vertical plane and a second magazine space vertical plane that is substantially parallel to said first magazine space vertical plane; wherein said magazine space has a magazine space depth that is the distance between said first and second magazine space vertical planes as measured along a line that is perpendicular to said first and second magazine space vertical planes; wherein said transport space first and second vertical planes and said magazine space first and second vertical planes are substantially parallel to one another; said transport space depth is greater than said magazine space depth and less than twice said magazine space depth.

- [c2] 2. A magazine-based data cartridge library, as claimed in claim 1, wherein:
said magazine transport device comprises:

a magazine picker for displacing a data cartridge magazine towards and away from said shelf; and
an elevator for moving said magazine picker within said transport space.

[c3] 3. A magazine-based data cartridge library, as claimed in claim 2, wherein:
said cartridge transport device comprises said elevator.

[c4] 4. A magazine-based data cartridge library, as claimed in claim 1, wherein:
said first and second transport space vertical planes and said first and second magazine space vertical planes are each planar.

[c5] 5. A magazine-based data cartridge library, as claimed in claim 1, wherein:
said first and second transport space vertical planes are concentric.

[c6] 6. A magazine-based data cartridge library, as claimed in claim 5, wherein:
said first and second magazine space vertical planes are planar.

[c7] 7. A magazine-based data cartridge library, as claimed in claim 1, wherein:
said first transport space vertical plane is substantially reduced

to a vertical line; and
said second transport space vertical plane follows an arc with
a radius that extends from said vertical line.

[c8] 8. A magazine-based data cartridge library, as claimed in
claim 1, wherein:

said transport space and said magazine space overlap.

[c9] 9. A magazine-based data cartridge library, as claimed in
claim 1, wherein:

said transport space depth is less than about 150% of said
magazine space depth.

[c10] 10. A magazine-based data cartridge library, as claimed in
claim 1, wherein:

said transport space depth is less than about 130% of said
magazine space depth.

[c11] 11. A magazine-based data cartridge library, as claimed in
claim 1, wherein:

said magazine space depth is within about +/- 20% of the
depth of said drive as measure between a front face and a
back face of said drive.